

New York/New Jersey Education and Research Center
Annual Report
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SECTION I

ERC Summary:

The mission of NY/NJ ERC is to educate professionals in occupational medicine, industrial hygiene, ergonomics and occupational safety and health engineering, so that they are able to understand, evaluate, prevent, manage and treat occupational disease and injury in the workers of our region and across the United States. The Center also provides continuing education in the core areas of industrial hygiene, occupational medicine, occupational health nursing, and occupational safety. Center Administration is responsible for the day-to-day operations of the ERC, serves as liaison between the programs and NIOSH, and is responsible for interdisciplinary interaction and coordination among the programs and their faculty and students.

NY/NJ ERC is a consortium of five educational institutions (www.nynjerc.org) offering nine programs in occupational health and safety training, covering three of the four essential core areas for ERC's, namely Occupational Medicine, Industrial Hygiene and Occupational Safety/Ergonomics. Constituent programs are:

- *Occupational Medicine and Pilot Project Research Program* at Mount Sinai School of Medicine (New York City, NY);
- *Occupational Medicine* at the Universities of Medicine and Dentistry of New Jersey (UMDNJ) - Robert Wood Johnson Medical School (Piscataway, NJ);
- *Industrial Hygiene* at Hunter College School of Health Sciences (New York City, NY);
- *Occupational Safety and Health Engineering* at the New Jersey Institute of Technology (Newark, NJ);
- *Occupational Ergonomics and Biomechanics Program* at New York University (New York City, NY).
- *Continuing Education, Outreach, Interdisciplinary Activities*, at UMDNJ-School of Public Health (Piscataway, NJ)

The NY/NJERC had 51 students enrolled in the ERC Programs during the 2011-12 Program Year. Fifteen students graduated from their respective programs. Of these fifteen, 11 were employed (as of August 1, 2012) in occupational safety and health field. Employment included private and public sector employers. Job titles of our graduates include staff physician, Senior Hazardous Materials Officer, Environmental Compliance Specialist, and Corporate Safety and Industrial Hygiene Manager.

The NY/NJ ERC continues its focus on interdisciplinary education. The Center provided its 7th Annual Historical Perspectives on Occupational Safety and Health Tour, the Site Visits Course, and 33rd Annual Scientific Meeting.

The NY/NJ ERC Continuing Education Program provided 207 courses, reaching 2,690 trainees. The trainees included 72 physicians, 192 occupational health nurses, 318 industrial hygienists, and 1,873 safety professionals. Of those trained, 2,244 were from private industry, 235 from the Federal Government, and 81 from State and Local Government.

Relevance:

The NY/NJ ERC provides education and training for students and professionals to increase their knowledge and practice in occupational safety and health. The objectives of the Center are aligned with the goals of Healthy People 2020, to prevent diseases, injuries, and deaths that are due to working conditions.

Key Personnel:

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ERC web link: www.nynjerc.org

SECTION II

Occupational Medicine (OM) Mount Sinai School of Medicine

The current residents are conducting research on WTC Health Program Patient's Urgent Care/Hospital Utilization Analysis at Mount Sinai & Its Affiliated Centers and Occupation Medicine Education Exposure Assessment during Medical School based on Residents Perspective.

Two new sites have been added to expand occupational medicine experience. The first is *The Kennedy Medical*, a medical clinic located at John F. Kennedy Airport. The clinic sees a unique variety of patients, including workers in the airline industry with work-related medical issues ranging from work place clearances to work related injuries, and treats illnesses affecting travelers. The clinic works closely with drug enforcement officials providing drug screening examinations. The second, *The Mount Sinai Department of Emergency Medicine*, consists of nine divisions: Research, Ultrasound, Education/simulation, Pre-hospital care and disaster medicine/EMS, Pediatric emergency medicine, Toxicology, Geriatric emergency medicine, Informatics and Global health which offers a diversified training experience. There are numerous clinical research programs within the department focusing on health services, health outcomes, applied informatics, and neurologic emergencies.

During the academic year 2011-2012, the trainees received the following awards:

- 2011 American Occupational Health Conference (AOHC) Resident Research Presentation Award: Stephanie Barnhart, MD, MPH "Cancer Survivorship Among Employees in a Cancer Center"
- 2011 American Occupational Health Conference Resident Research Presentation Award: Alisa Koval, MD, MPH, MHSA "Are Pulmonary Function & Respiratory Symptoms Associated with CT Abnormalities in Asbestos-exposed Populations"

- 2011 Graduate Medical Education Research Day MSSM: Best Poster – Education, Basic Research & Quality Improvement: Stephanie Barnhart “Cancer Survivorship Among Employees in a Cancer Center”

Occupational Medicine (OM) UMDNJ-Robert Wood Johnson Medical School

The Occupational and Environmental Medicine Residency program received its reaccreditation under the new requirements from the ACGME in March, 2012. All residents have had at least two years of prior training in primary care and all hold unrestricted New Jersey Medical Licenses. The entire program, including the Clinical Center is housed in the Environmental and Occupational Health Sciences Institute (EOHSI).

The largest single component of the EOHSI is the World Trade Center (WTC) Diagnosis and Treatment program, which has enrolled over 1000 WTC emergency responders. The RWJMS component of the project is directed by Iris Udasin, MD. Highlights of the past year include the publication of several papers, in collaboration with the Mount Sinai WTC physicians, on the persistence of multiple illnesses, including asthma and post-traumatic stress disorder. The ongoing saga of the WTC responders has been a continuing source of lessons-learned regarding disaster response and dust inhalation. The program has also recruited former graduate, Michael Pratt, MD, MPH, to work as a clinician on the WTC. Further investigations of this cohort include a program project pilot grant from the NIEHS-Center for Environmental Exposure and Disease, as well as a NIOSH-funded clinical trial for obstructive sleep apnea related to WTC exposure.

The Division conducts research on exposure to diesel exhaust both in the field (New Jersey Turnpike traffic) and the laboratory (controlled exposure chamber), leading to recent publications by Drs. Howard Kipen and Robert Laumbach. These studies highlight exposure to diesel exhaust as potential hazards for commercial drivers as well as communities.

Following the deindustrialization of the Northeast, the health care industry has become the major growth industry in the region. Researchers at both RWJMS-Occupational Medicine and Mount Sinai-Occupational Medicine have made health care worker health and safety a priority. At RWJMS attention has focused on the diffusion of innovation of safety devices and effect on blood-borne pathogen exposure. The Division's responsibility for Employee Health for the Medical School provides both data and responsibility for identifying risk factors for “sharps” events and providing feedback to Departments and to the Graduate Medical Education Committee.

Industrial Hygiene (IH) Hunter College

The Hunter Environmental and Occupational Health Sciences (EOHS) Program has 4 full-time and one part-time faculty line. Hunter College is now part of The CUNY SPH, a consortium of the public health programs at Hunter, Brooklyn, and Lehman Colleges, and the Graduate Center. The CUNY SPH offers an ABET-accredited Industrial Hygiene MS degree program and a CEPH-accredited MPH degree program in Environmental and Occupational Health Sciences (EOHS) at the Hunter College Campus. In 2011-12, the MS-EOHS track had 39 students; 12 of those students graduated during this period. 17 of the 39 students (44 percent) were from underrepresented minority backgrounds. The HSAT Program represents a concentration within the MS-EOHS program. In 2011-12, five MS-EOHS students were enrolled in this concentration. All MS-EOHS graduates (except two unknown) in the past year have found professional OSH employment.

Two NIOSH ERC students participated in research seeking improved IH controls for the management of eWaste processing in Accra, Ghana. This project involved training workers on more environmentally friendly and healthier eWaste processing methods. One student was immediately employed after the project by a large NYC hospital health and safety program.

Occupational Safety and Health Engineering (OSHE) New Jersey Institute of Technology

The Occupational Safety and Health Engineering (OSHE) program resides in the department of Mechanical & Industrial Engineering of New Jersey Institute of Technology (NJIT). The program leads to a Master of Science degree in OSHE. The objective of this program is to train degreed engineering and science graduates at the graduate level to anticipate, identify, evaluate and resolve occupational safety and health hazards through engineering design, and to advance knowledge of safety and ergonomics through faculty and student research.

Fourteen trainees enrolled into the program during the 2011-12 academic year, and the program maintained a diverse student body with 50:50 male-female ratio, 17% white, 17% Hispanic, 8% Asian and 59% with other or non-declared racial backgrounds. Six trainees graduated from the program during the 2011-12 academic year and three program graduates have accepted full time employment in the EHS departments in local industries (Groome Industrial Service Group, Becton Dickinson and Company, and LGS Innovations). The research output from the training grant included three peer-reviewed conference articles (IEEE Systems Man and Cybernetics 2011, and Applied Human Factors and Ergonomics Conference 2012) and five professional presentations in scientific meetings and conferences. The future focus of the program is to maintain steady trainee enrollment and research output.

Ergonomics and Biomechanics (ERBI) New York University

The New York University Graduate Program of Ergonomics and Biomechanics (ERBI) focuses on student education and training in the translation of research to local industry, and dissemination of study findings in peer-reviewed journals and at professional conferences. ERBI students published ten publications and presented at four conferences, all of which were the result of ERC-funded research activities. The student enrollment in ERBI has remained stable with four Master's students and nine PhD students. ERBI alumni are employed in various aspects of occupational safety and health, serving, for example, as faculty, researchers, consultants, or clinicians in a wide range of industries and work settings, including government and non-government agencies.

The students are actively engaged in research, either their own, or as Research Associates on ERBI faculty projects. These studies focus on various sectors of the workforce, such as hospital workers (Translation of low back guidelines into an electronic medical record for use by occupational health care providers in the VA), nurses (Work related musculoskeletal disorders among nurses: effective management and prevention of chronicity), dentists (Developing an observational tool for assessing safe body mechanics of preclinical dental students), office staff (Effect of foam density and pressure mapping and comfort: application to seat design), Navy personnel (Impact of evidence based spine care on work loss time) and aging workers (The effect of shoulder muscle fatigue caused by sustained overhead work on scapulothoracic kinematics in younger and older populations). Outside collaborators on these projects include, for example, NYU Langone Medical Center and School of Dentistry, the US Navy, Veterans Administration and Humanscale.

Interdisciplinary Training

The Center conducted its 7th Annual Historical Perspectives Tour on Occupational Safety and Health. The course visited agriculture, fishing, paper processing, ship building, and granite quarrying. The comments from students show how experiences such as this tour provide them with new insights into occupational safety and health. They experience interdisciplinary interactions, work with students from other disciplines, and see solutions from different perspectives. One student wrote, "The ERC tour allowed for knowledge gained academically to be applied in real life scenarios. This is a major advantage in having hands on experience, learning about various work sites, techniques, and assessing practical improvements. The interaction with fellow faculty and other students allowed for an immense support system in encouragement, learning, and new friendships. In the professional world, an array of work conditions are encountered and this tour provided more perspective on what may be encountered."

Pilot Project Research Training (PPRT) Mount Sinai School of Medicine

The Pilot Project Research Training (PPRT) Program provides funding to trainees and other researchers at institutions in Region II whose students or faculty wish to undertake occupational safety and health (OSH) research. In 2011-12, a total of nine applications for funding were received, and six projects were approved for funding. Applications were received from a range of NY/NJ ERC institutions. The continued diversity of projects underscores the interdisciplinary approach fostered through the program. Of the funded projects, one was awarded to an ERC trainee at NYU and another to a PhD student at Mount Sinai; two were awarded to ERC investigators who have the support of senior research faculty; and two were awarded to non-ERC junior faculty. Funded projects represent multiple NORA sectors and goals, and address chemical, ergonomic, and other physical hazards facing workers in our region. Pilot project awardees from 2010-11 presented their research findings at a poster session during our annual ERC Scientific Day on March 30, 2012. Recent awardees have: submitted their pilot research for publication in three peer-reviewed journals and are preparing four additional papers for submission; presented their pilot data at one international and two national meetings; and received additional research funding from a foundation to expand the work.

Continuing Education (CE) UMDNJ-School of Public Health

The Continuing Education Program has provided training to over 2,600 OSH professionals. The CE Program has initiated an evaluation of the impact training has on workplace practice. Initial results indicate that training makes a difference in the way that workers address safety and health issues at their workplace. The training increased participants OSH knowledge and skills, motivated trainees to identify changes at their workplace, and helped them identify areas for improvement. Trainees also expected to make changes at their workplace. Follow-up surveys indicate that 75% of the trainees who expected to make a change due to the training they attended actually did make the expected change in the workplace. More research to evaluate the impact of the CE Program on workplace practice will be continued over the next program year.